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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,624	10/28/2003	Ryan Taylor Herbst	5693P225	5633

48102 7590 05/11/2006

NETWORK APPLIANCE/BLAKELY  
12400 WILSHIRE BLVD  
SEVENTH FLOOR  
LOS ANGELES, CA 90025-1030

EXAMINER

MOAZZAMI, NASSER G

ART UNIT

PAPER NUMBER

2187

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/696,624

Applicant(s)

HERBST ET AL.

Examiner

Nasser G. Moazzami

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) 18-51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/31/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. Information Disclosure Statement submitted by applicant on 01/31/2006 has been considered. See attached PTO-1449.

### ***Election/Restrictions***

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-17 drawn to memory access blocking and access limiting, classified in class 711, subclasses 152, and 163.
  - II. Claims 18-34 drawn to tracking the order of incoming and outgoing frames, classified in class 711, subclasses 151, and 158.
  - III. Claims 35-51 drawn to timers and managing the timers, classified in class 711, subclasses 154, and 167.
- I. The inventions are distinct, each from the other because of the following reasons:

Inventions I, II, and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has a utility such as memory access blocking and access limiting, invention II has separate utility such as tracking the order of incoming and outgoing frames, and invention III has a utility such as timers and managing the timers. See MPEP § 806.05(d).

II. Because these inventions are distinct for the reasons given above and the search required for each group is not required for any of the other groups, restriction for examination purposes as indicated is proper.

III. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

IV. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

3. During a telephone conversation with Jordan M. Becker (39,602) on 05/08/2006 a provisional election was made without traverse to prosecute the invention of group I, claims 1-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-51 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Daynes (US Patent No. 6,343,339).

As per claims 1, Daynes teaches a processor **[processor 113 (Fig. 1)]** for offloading processing in a storage environment, comprising: a processor interface **[Communication interface 120 (Fig. 1)]** that interfaces said processor to a network processor **[local network 122, ISP 124, or internet 125 (Fig. 1)]** configured to perform a storage function; and semaphore circuitry **[lock data structure; lock manager]**, coupled to said processor interface, that receives a signal from said network processor, and that controls a semaphore related to said signal for locking and unlocking access to data **[request to lock and releasing the lock (column 11, lines 14-33)]**.

As per claim 2, Daynes discloses that said semaphore circuitry manages a queue for access to said semaphore **[queue (column 11, line 20-22)]**.

As per claim 3, Daynes teaches that said semaphore circuitry receives a second signal from said network processor and removes a request from said queue in response to said second signal when said network processor no longer desires said semaphore **[clearing deadlock conflict]**.

As per claim 4, Daynes discloses that said semaphore circuitry refrains from sending to said network processor a second signal indicating said semaphore is unavailable, whereby said network processor continues to wait for said semaphore and said semaphore circuitry maintains ordered access to said queue **[the lock manager waits for the lock to become available (column 11, lines 28-29)]**.

As per claim 5, Daynes discloses that said signal comprises one of a plurality of access requests for one of a plurality of semaphores, wherein said semaphore circuitry manages said plurality of access requests in a plurality of queues, and wherein each of said plurality of queues corresponds to a respective one of said plurality of semaphores **[TILS (column 15, line 40)]**.

As per claim 6, Daynes discloses a command queue that stores said signal received from said network processor **[wait queue]**.

As per claims 7-8, and 10, Daynes discloses that said semaphore is a structure in a hash array, and wherein said semaphore circuitry comprises a hash key generator

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that performs a hashing function on said signal for accessing said hash array; an update engine that receives a second signal from said network processor relating to a first process thread on said network processor, releases a lock on said semaphore related to said second signal, and sends a third signal to said network processor associating said semaphore with a second process thread on said network processor **[TILS can be implemented as a hash table (column 15, line 43); locking and releasing the lock and acknowledgment that the lock is available]**.

As per claim 9, Daynes discloses a semaphore queue manager that manages a queue of a plurality of semaphores **[lock manager]**.

As per claims 11-17, claims 11-17 encompass the same scope of the invention as those of claims 1-10. Therefore, claims 11-17 are rejected for the same reasons as stated above with respect to claims 1-10.

7. Claims 1-5, 8, 11-14, and 16 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant Admitted Prior Art (AAPA).

As per claim 1, AAPA discloses a processor **[host 12]** for offloading processing in a storage environment, comprising: a processor interface **[network 14]** that interfaces said processor to a network processor configured to perform a storage function **[server 14 and storage 18]**; and semaphore circuitry **[semaphore circuitry]**,

coupled to said processor interface, that receives a signal from said network processor, and that controls a semaphore related to said signal for locking and unlocking access to data **[controlling access to data space by semaphore management]**.

As per claims 2, and 5, AAPA discloses that said semaphore circuitry manages a queue for access to said semaphore **[no other thread should access the data space when one thread is using the space, inherently there has to be a queue of waiting thread to access the data space next]**.

As per claims 3-4, and 8, AAPA teaches that said semaphore circuitry receives a second signal from said network processor and removes a request from said queue in response to said second signal when said network processor no longer desires said semaphore **[processing the second thread when the first thread finished with the data space]**.

As per claims 11-14 and 16, claims 11-14 and 16 encompass the same scope of the invention as those of claims 1-5 and 8. Therefore, claims 11-14, and 16 are rejected for the same reasons as stated above with respect to claims 11-14, and 16.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached PTO-892.



9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nasser G. Moazzami whose telephone number is (571) 272-4195. The examiner can normally be reached on 7:00AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**NASSER MOAZZAMI**  
**PRIMARY EXAMINER**



05/08/2006